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10/666,620	09/19/2003	Zhichen Xu	200209304-1	9231

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EXAMINER	
ROBERTS, BRIAN S	

ART UNIT	PAPER NUMBER
2619	

NOTIFICATION DATE	DELIVERY MODE
04/29/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/666,620	XU ET AL.	
	Examiner	Art Unit	
	BRIAN ROBERTS	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

- The amendment filed on 01/29/2008 is acknowledged.
- Claims 1-25 remain pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- In reference to claim 1

The term "close" in lines 7 and 9 are relative term which renders the claim indefinite. The term "close" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

- In reference to claim 10, 22

The term "close" in line 6 is a relative term which renders the claim indefinite. The term "close" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

- In reference to claim 15

The term "close" in line 8 is a relative term which renders the claim indefinite. The term "close" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

- The dependent claims are rejected as being dependent on a rejected independent claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 and 8-25, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuchiya et al. (US 4,823,111)

- In reference to claim 1

In Figure 3, Tsuchiya et al. teaches a method of determining whether a network condition occurred i.e. a node added or removed, the network condition being associated with a region in the overlay network; storing a proximity information in the region, wherein the proximity information includes locations of nodes physically close in the physical network updating the proximity information stored in the region if a change

associated with the nodes physically close in the physical network occurred; and transmitting the proximity information to a LM_{L+1} (*first node*) operable to route a message to the region in response to the network condition occurring. (column 7 line 63 - column 8 line 34; column 9 lines 3-55)

- In reference to claim 2

In Figure 8, Tsuchiya et al. further teaches selecting a LM_{L+2} (*routing node*) in the region based on the proximity information transmitted to the LM_{L+1} (*first node*); determining whether the selected LM_{L+2} (*routing node*) is different than a previously selected LM_{L+2} (*routing node*) for the region; and placing the selected LM_{L+2} (*routing node*) in a routing table for the LM_{L+1} (*first node*) in response to the selected LM_{L+2} (*routing node*) being different than the previously selected LM_{L+2} (*routing node*). (column 9 lines 16-55; column 13 lines 10-44)

- In reference to claim 3

In Figure 8, Tsuchiya et al. further teaches that selecting a LM_{L+1} (*first node*) includes identifying a node in the region physically closest to the LM_{L+1} (*first node*) based on the proximity information transmitted to the LM_{L+1} (*first node*). (column 9 lines 16-55)

- In reference to claim 4

Tsuchiya et al. further teaches the network condition includes one or more of a predetermined number of nodes joining the region; a predetermined number of nodes departing from the region; a lapsing of a predetermined period of time. (column 7 line 63 - column 8 line 34)

- In reference to claim 5

Tsuchiya et al. further teaches the LM_{L+1} (*first node*) identifying the network condition to be monitored. (column 7 line 63 - column 8 line 34)

- In reference to claim 6

Tsuchiya et al. further teaches generating the proximity information stored in the region by determining distances of substantially all the nodes in the overlay network to landmark nodes. (column 7 line 63 -column 8 line 34)

- In reference to claim 8

Tsuchiya et al. further teaches that transmitting the proximity information further includes transmitting at least one measured network metric for a node in the region and the proximity information to the LM_{L+1} (*first node*). (column 7 line 63 - column 8 line 34)

- In reference to claim 9

Tsuchiya et al. further teaches selecting a LM_{L+2} (*routing node*) for the region based on one or more of the at least one measured network metric and the proximity information. (column 7 line 63 - column 8 line 34)

- In reference to claim 10

In Figure 8, Tsuchiya et al. teaches a method that includes selecting a LM_{L+1} (*target node*) in a region in an overlay network, the overlay network being a logical representation of a physical network; (column 9 lines 16-55) determining a network condition to be monitored by the LM_{L+1} (*target node*); and receiving a notification from the LM_{L+1} (*target node*) including a map for the region, wherein the map includes locations of nodes physically close in the physical network, in response to the LM_{L+1} (*target node*)the network condition. (column 7 line 63 - column 8 line 34)

- In reference to claim 11

Tsuchiya et al. further teaches the notification further comprises at least one network metric associated with the LM_{L+1} (*target node*). (column 7 line 63 - column 8 line 34)

- In reference to claim 12

Tsuchiya et al. further teaches that the network metric includes at least one of nodes joining the region; nodes departing from the region; and lapsing of a predetermined period of time. (column 7 line 63 - column 8 line 34)

- In reference to claim 13

Tsuchiya et al. further teaches determining a LM_{L+2} (*routing node*) for the region based on at least one of the map and the at least one network metric. (column 7 line 63 - column 8 line 34)

- In reference to claim 14

In Figure 8, Tsuchiya et al. further teaches that determining a LM_{L+2} (*routing node*) for the region further includes determining a physically closest node closest to a LM_L (*source node*) in the physical network based on the map; and selecting the physically node as a LM_{L+2} (*routing node*) for the region. (column 7 line 63 - column 8 line 34; column 3 line 41 - column 4 line17; column 13 lines 10-44)

- In reference to claim 15

In Figure 8, Tsuchiya et al. teaches a system that includes a LM_{L+2} (*target node*) in a target region in the overlay network, the LM_{L+2} (*target node*) being operable to determine whether a predetermined network condition occurred and transmit a notification to a LM_L (*source node*) in response to the network condition occurring; (column 7 line 63 - column 8 line 34) and the LM_L (*source node*) being operable to receive the notification and select a LM_{L+1} (*routing node*) in the target region based on the received notification, wherein the received notification includes a map comprising locations of nodes physically close in the physical network. (column 9 lines 16-55)

- In reference to claim 16

In Figure 8, Tsuchiya et al. further teaches that the LM_{L+1} (*routing node*) is a node in the target region physically closest to the LML (source node).

- In reference to claim 17

In Figure 8, Tsuchiya et al. further teaches that the notification includes at least one network metric measured by the LM_{L+2} (*target node*), the LM_L (*source node*) being operable to select the LM_{L+1} (*routing node*) based on the at least one network metric. (column 7 line 63 - column 8 line 34)

- In reference to claim 18

In Figure 8, Tsuchiya et al. further teaches that the at least one network metric comprises at least one of nodes joining the target region; nodes departing from the target region; and a lapsing of a predetermined period of time. (column 7 line 63 - column 8 line 34)

- In reference to claim 19

In Figure 8, Tsuchiya et al. further teaches that the LM_L (*source node*) is operable to transmit a message to the LM_{L+2} (*target node*), identifying the network condition. (column 7 line 63 - column 8 line 34)

- In reference to claim 20

In Figure 8, Tsuchiya et al. further teaches that the overlay network comprises a distributed hash table overlay network. (column 2 lines 64 - column 3 lines 11; column 7 line 63 - column 8 line 34)

- In reference to claim 21

In Figure 8, Tsuchiya et al. further teaches that the overlay network includes an eCAN overlay network, and the LM_L (*source node*) is an expressway routing node operable to select an expressway routing node in the region. (column 9 lines 16-55)

- In reference to claim 22

In Figure 8, Tsuchiya et al. teaches a system that includes means for selecting a target node in a LM_{L+2} (*target node*) in the overlay network; (column 13 lines 10-44) means for determining a network condition to be monitored by the LM_{L+2} (*target node*); (column 7 line 63 - column 8 line 34) and means for receiving a notification from the LM_{L+2} (*target node*) including a map for the region, wherein the map includes locations of nodes physically close in the physical network. (column 7 line 63 - column 8 line 34)

- In reference to claim 23

In Figure 8, Tsuchiya et al. further teaches means for determining first proximity information associated with a location of the node in the network; means for searching through the map using the first proximity information; and means for identifying a LM_{L+1}

(*routing node*) in the target region based on the searching through the map, wherein the LM_{L+1} (*routing node*) is a node in the target region physically closest to the node relative to other nodes in the region. (column 13 lines 10-44)

- In reference to claim 24

In Figure 8, Tsuchiya et al. further teaches that the node includes means for storing a routing table, wherein the routing table includes information identifying the LM_L (*source node*). (column 2 lines 64 - column 3 lines 11; column 7 line 63 - column 8 line 34)

- In reference to claim 25

In Figure 8, Tsuchiya et al. further teaches that the notification further includes at least one measured network metric, and the means for identifying a LM_{L+1} (*routing node*) is operable to identify the routing node based on the at least one measured network metric. (column 2 lines 64 - column 3 lines 11; column 7 line 63 - column 8 line 34)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 7, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (US 4,823,111) in view of Kuznetsov (US 6021406).

- In reference to claim 7

Tsuchiya et al. further teaches a system and method that covers substantially all limitations of the parent claim.

Tsuchiya et al. does not teach determining points in the overlay network used to store the proximity information by mapping the locations of the nodes physically close in the physical network to points logically close in the overlay network using a space-filling curve.

In Figure 2, Kuznetsov teaches a method of utilizing a space-filling curve to store proximity information by mapping the locations of points physically close in a physical network to points logically close in an overlay network. (column 3 line 58 - column 4 line 31)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of Tsuchiya et al. to include utilizing a space-filling curve to store proximity information by mapping the locations of nodes physically close in a physical network to points logically close in a overlay network as suggest by Kuznetsov because it would allow for efficient and rapid identification of the location of a group of nodes from consecutive spatial key numbers that identify the nodes.

Response to Arguments

Applicant's arguments filed 1/29/2008 have been fully considered but they are not persuasive.

- In the Remarks on pg. 9 of the Amendment, the Applicant contends that Tsuchiya et al. fails to meet the limitation "physically close in the physical network" of the independent claims.
- The Examiner respectfully disagrees because the limitation "close" is a relative term which renders the claim indefinite. Therefore, the nodes of the physical network in Tsuchiya et al. are physically "close" as best understood.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN ROBERTS whose telephone number is (571)272-3095. The examiner can normally be reached on M-F 10:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wing F. Chan/
Supervisory Patent Examiner, Art Unit 2619
4/24/08

BSR
04/16/2008